Ballfields Parcels at DoDHF Novato, CA Data Validation Reports LDC# 13575

Diesel Range Organics & Residual Range Organics



Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Ballfields Parcels at DoDHF Novato, CA

Collection Date: April 6, 2005

LDC Report Date: June 14, 2005

Matrix: Soil

Parameters: Diesel Range Organics & Residual Range Organics

Validation Level: NFESC Level III

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K2502497

Sample Identification

TO63-R2-SB04-0-0.5 TO63-R5-SB03-0-0.5MS TO63-R2-SB04-3-4 TO63-R5-SB03-0-0.5MSD

TO63-R2-SB01-0-0.5

TO63-R2-SB01-0-0.5 Dup

TO63-R2-SB01-1-2

TO63-R1-SB04-0-0.5

TO63-R1-SB04-4-5

TO63-R1-SB01-0-0.5

TO63-R1-SB03-0-0.5

TO63-R1-SB03-4-5

TO63-R4-SB04-0-0.5

TO63-R4-SB04-4-5

TO63-R5-SB04-0-0.5

TO63-R5-SB04-5-6

TO63-R5-SB02-0-0.5

TO63-R5-SB02-3-4

TO63-R5-SB01-0-0.5

TO63-R5-SB03-0-0.5

TO63-R2-SB03-0-0.5

TO63-R2-SB02-0-0.5

Introduction

This data review covers 22 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 for Diesel Range Organics and Residual Range Organics.

The review follows the Final Sampling and Analysis Plan for Preliminary Assessment/Site Investigation of Ballfields Parcels at DoDHF Novato, California, (March 23, 2005) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than 20.0%.

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent difference (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic or residual range organic contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
KWG0506138-4	4/16/05	Residual range organics	6.4 mg/Kg	All samples in SDG K2502497

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
TO63-R2-SB04-0-0.5	Residual range organics	9.3 mg/Kg	20U mg/Kg
TO63-R2-SB01-0-0.5	Residual range organics	32 mg/Kg	32U mg/Kg

Sample	Compound	Reported Concentration	Modified Final Concentration
TO63-R2-SB01-1-2	Residual range organics	24 mg/Kg	24U mg/Kg
TO63-R1-SB04-4-5	Residual range organics	21 mg/Kg	21U mg/Kg
TO63-R4-SB04-0-0.5	Residual range organics	30 mg/Kg	30U mg/Kg
TO63-R4-SB04-4-5	Residual range organics	25 mg/Kg	25U mg/Kg
TO63-R5-SB04-0-0.5	Residual range organics	11 mg/Kg	20U mg/Kg
TO63-R5-SB04-5-6	Residual range organics	32 mg/Kg	32U mg/Kg
TO63-R5-SB02-0-0.5	Residual range organics	8.4 mg/Kg	20U mg/Kg
TO63-R5-SB02-3-4	Residual range organics	15 mg/Kg	20U mg/Kg
TO63-R5-SB03-0-0.5	Residual range organics	18 mg/Kg	20U mg/Kg

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples TO63-R2-SB01-0-0.5 and TO63-R2-SB01-0-0.5 Dup and samples TO63-R1-SB01-0-0.5 and TO63-R1-SB01-0-0.5Dup (from SDG K2502499) were identified as field duplicates. No diesel range organics or residual range organics were detected in any of the samples with the following exceptions:

	Concentra		
Compound	TO63-R2-SB01-0-0.5	TO63-R2-SB01-0-0.5 Dup	RPD
Residual range organics	32	44	32

	Concentra		
Compound	TO63-R1-SB01-0-0.5	TO63-R1-SB01-0-0.5Dup	RPD
Diesel range organics	24	15	46
Residual range organics	300	160	61

X. Field Blanks

No field blanks were identified in this SDG.

Ballfields Parcels at DoDHF Novato, CA Diesel Range Organics & Residual Range Organics - Data Qualification Summary -SDG K2502497

No Sample Data Qualified in this SDG

Ballfields Parcels at DoDHF Novato, CA Diesel Range Organics & Residual Range Organics - Laboratory Blank Data Qualification Summary - SDG K2502497

SDG	Sample	Compound	Modified Final Concentration	A or P
K2502497	TO63-R2-SB04-0-0.5	Residual range organics	20U mg/Kg	А
K2502497	TO63-R2-SB01-0-0.5	Residual range organics	32U mg/Kg	Α
K2502497	TO63-R2-SB01-1-2	Residual range organics	24U mg/Kg	Α
K2502497	TO63-R1-SB04-4-5	Residual range organics	21U mg/Kg	А
K2502497	TO63-R4-SB04-0-0.5	Residual range organics	30U mg/Kg	Α
K2502497	TO63-R4-SB04-4-5	Residual range organics	25U mg/Kg	Α
K2502497	TO63-R5-SB04-0-0.5	Residual range organics	20U mg/Kg	А
K2502497	TO63-R5-SB04-5-6	Residual range organics	32U mg/Kg	Α
K2502497	TO63-R5-SB02-0-0.5	Residual range organics	20U mg/Kg	А
K2502497	TO63-R5-SB02-3-4	Residual range organics	20U mg/Kg	Α
K2502497	TO63-R5-SB03-0-0.5	Residual range organics	20U mg/Kg	А

Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502497 Date Collected: 04/06/2005

Date Received: 04/07/2005

Date

Diesel and Residual Range Organics

Sample Name:

TO63-R2-SB04-0-0.5

Lab Code:

K2502497-001

Extraction Method:

EPA 3550B

Analysis Method:

8015M

Units: mg/Kg Basis: Dry

Level: Low

Extraction

Note

Analyte Name
Diesel Range Organics (DRO)
Residual Range Organics (RRO)

Result O	MRL	MDL	Factor	Extracted	Analyzed	Lot
ND U	13	3.9	1	04/16/05	04/20/05	KWG0506138
9.3 J 20U	20	3.7	1	04/16/05	04/20/05	KWG0506138

Dilution

Date

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Terphenyl	89	54-140	04/20/05	Acceptable
Triacontane	95	50-150	04/20/05	Acceptable

Comments:

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SuperSet Reference: RR47336

Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005 Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R2-SB04-3-4

Lab Code:

K2502497-002

Extraction Method:

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

Analysis Method:

8015M

				Dilution	Date	Date	Extraction	••
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	7.8 J	12	5.9	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	45 Z	19	5.6	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl	87	54-140	04/20/05	Acceptable	
n-Triacontane	79	50-150	04/20/05	Acceptable	

Comments:

Form 1A - Organic

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SuperSet Reference: RR47336

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Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005 Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R2-SB01-0-0.5

Lab Code:

K2502497-003

Extraction Method:

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

Analysis Method:

8015M

				Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	ND U	12	5.3	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	32 Z U	19	5.0	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
Ferphenyl	84	54-140	04/20/05	Acceptable	
Friacontane	88	50-150	04/20/05	Acceptable	

Comments:

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Form 1A - Organic

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Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502497 Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Kange Organics

Sample Name:

TO63-R2-SB01-0-0.5 DUP

Lab Code:

K2502497-004

Extraction Method:

EPA 3550B

Analysis Method:

8015M

Units: mg/Kg Basis: Dry

Level: Low

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO) Residual Range Organics (RRO)	ND U 44 Z	12 19	4.9 4.7	1 1	04/16/05 04/16/05	04/20/05 04/20/05	KWG0506138 KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl	91	54-140	04/20/05	Acceptable	
n-Triacontane	82	50-150	04/20/05	Acceptable	

Comments:

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Analytical Results

Client:

Battelle Memorial Institute Novato Ballfields/G486063

Project: Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R2-SB01-1-2

Lab Code:

K2502497-005

Extraction Method:

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

Analysis Method:

8015M

				Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	ND U	13	5.3	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	24 Z U	20	5.0	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	90	54-140	04/20/05	Acceptable
n-Triacontane	80	50-150	04/20/05	Acceptable

Comments:

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SuperSet Reference: RR47336

Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005 Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R1-SB04-0-0.5

Lab Code:

K2502497-006

Extraction Method: Analysis Method:

EPA 3550B

8015M

Units: mg/Kg

Basis: Dry

Level: Low

A. N. (N	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Analyte Name Diesel Range Organics (DRO) Residual Range Organics (RRO)	7.7 J 60 Z	13 20	3.9 3.7	1 1	04/16/05 04/16/05	04/20/05 04/20/05	KWG0506138 KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	96	54-140	04/20/05	Acceptable
n-Triacontane	87	50-150	04/20/05	Acceptable

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SuperSet Reference: RR47336

Analytical Results

Client:

Battelle Memorial Institute Novato Ballfields/G486063

Project: Sample Matrix:

Soil

Service Request: K2502497 Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R1-SB04-4-5

Lab Code:

K2502497-007

Analysis Method:

Extraction Method: EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

8015M

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO) Residual Range Organics (RRO)	ND U 21 Z /	13 20	5.8 5.5	1 1	04/16/05 04/16/05	04/20/05 04/20/05	KWG0506138 KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	85	54-140	04/20/05	Acceptable Acceptable
n-Triacontane	74	50-150	04/20/05	

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Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R1-SB01-0-0.5

Lab Code:

K2502497-008

Extraction Method:

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

Analysis Method:

8015M

A callede Nomo	Result O	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Analyte Name Diesel Range Organics (DRO)	24 H	13	3.9	1	04/16/05 04/16/05	04/20/05 04/20/05	KWG0506138 KWG0506138	
Residual Range Organics (RRO)	300 O	20	3.6	1	04/10/03	04/20/03	1000000000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl	93	54-140	04/20/05	Acceptable	
n-Triacontane	101	50-150	04/20/05	Acceptable	

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Analytical Results

Client: Project: Battelle Memorial Institute Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005 Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R1-SB03-0-0.5

Lab Code:

K2502497-009

Extraction Method: Analysis Method:

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

8015M

				Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	12 J	13	4.2	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	140 Z	20	4.0	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl n-Triacontane	95 103	54-140 50-150	04/20/05 04/20/05	Acceptable Acceptable	

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SuperSet Reference: RR47336

Analytical Results

Client:

Battelle Memorial Institute Novato Ballfields/G486063

Project: Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R1-SB03-4-5

Lab Code:

K2502497-010

Extraction Method:

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

Analysis Method:

8015M

			Dilution	Date	Date	Extraction	
Result O	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
	12	5.4	1	04/16/05	04/20/05	KWG0506138	
45 Z	19	5.0	1	04/16/05	04/20/05	KWG0506138	
	Result Q ND U 45 Z	ND U 12	ND U 12 5.4	Result Q MRL MDL Factor ND U 12 5.4 1	Result Q MRL MDL Factor Extracted ND U 12 5.4 1 04/16/05 04/16/05 04/16/05 04/16/05 04/16/05	Result Q MRL MDL Factor Extracted Analyzed ND U 12 5.4 1 04/16/05 04/20/05 10 10 04/16/05 04/20/05 04/20/05	Result Q MRL MDL Factor Extracted Analyzed Lot ND U 12 5.4 1 04/16/05 04/20/05 KWG0506138 ND U 12 5.4 1 04/16/05 04/20/05 KWG0506138

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl	83	54-140	04/20/05	Acceptable	
n-Triacontane	86	50-150	04/20/05	Acceptable	

Comments:

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RR47336 SuperSet Reference:

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Analytical Results

Client:

Battelle Memorial Institute Novato Ballfields/G486063

Project: Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R4-SB04-0-0.5

Lab Code:

K2502497-011

Extraction Method: Analysis Method:

EPA 3550B

8015M

Units: mg/Kg Basis: Dry

Level: Low

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO) Residual Range Organics (RRO)	ND U 30 Z //	13 20	3.9 3.7	1 1	04/16/05 04/16/05	04/20/05 04/20/05	KWG0506138 KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl	88	54-140	04/20/05	Acceptable	
n-Triacontane	94	50-150	04/20/05	Acceptable	

Comments:

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Form 1A - Organic

SuperSet Reference:

RR47336

Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005

Note

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R4-SB04-4-5

Lab Code:

K2502497-012

Extraction Method: Analysis Method:

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

8015M

Extraction Date Dilution Date

Factor Extracted Analyzed Lot MDL **MRL** Result Q **Analyte Name** KWG0506138 04/21/05 13 5.5 1 04/16/05 Diesel Range Organics (DRO) ND U KWG0506138 04/21/05 5.2 1 04/16/05 25 Z U 20 Residual Range Organics (RRO)

Control Date Note %Rec Limits Analyzed Surrogate Name Acceptable 54-140 04/21/05 77 o-Terphenyl Acceptable 04/21/05 85 50-150 n-Triacontane

Comments:

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Form 1A - Organic

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SuperSet Reference: RR47336

Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005 Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

Analyte Name

TO63-R5-SB04-0-0.5

Result Q

ND U

11 J 20 W

Lab Code:

K2502497-013

Extraction Method:

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

Analysis Method:

Diesel Range Organics (DRO)

Residual Range Organics (RRO)

8015M

MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
3.9	1	04/16/05	04/20/05	KWG0506138	
3.7	1	04/16/05	04/20/05	KWG0506138	

04/16/05

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl	91	54-140	04/20/05	Acceptable	
n-Triacontane	99	50-150	04/20/05	Acceptable	

3.7

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MRL

13

20

Comments:

Analytical Results

Client:

Battelle Memorial Institute Novato Ballfields/G486063

Project: Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R5-SB04-5-6

Lab Code:

K2502497-014

Extraction Method: Analysis Method:

EPA 3550B

8015M

Units: mg/Kg Basis: Dry

Level: Low

Analyte Name	Result O	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO) Residual Range Organics (RRO)	ND U 32 Z //	13 20	5.9 5.5	1 1	04/16/05 04/16/05	04/20/05 04/20/05	KWG0506138 KWG0506138	•

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl	82	54-140	04/20/05	Acceptable	
n-Triacontane	74	50-150	04/20/05	Acceptable	

Comments:

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Form 1A - Organic

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RR47336 SuperSet Reference:

Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R5-SB02-0-0.5

Lab Code:

K2502497-015

Extraction Method:

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

Analysis Method:

8015M

				Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	ND U	13	3.9	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	8.4 J 2011	20	3.7	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl n-Triacontane	93 101	54-140 50-150	04/20/05 04/20/05	Acceptable Acceptable	

Comments:

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Form 1A - Organic

Page 1 of 1

SuperSet Reference: RR47336

Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005

Date Received: 04/07/2005

Note

Diesel and Residual Range Organics

Sample Name:

TO63-R5-SB02-3-4

Lab Code:

K2502497-016

Extraction Method: Analysis Method:

EPA 3550B

8015M

Units: mg/Kg Basis: Dry

Level: Low

				Dilution	Date	Date	Extraction
Analyte Name	Result O	MRL	MDL	Factor	Extracted	Analyzed	Lot
Diesel Range Organics (DRO)	ND U	13	5.9	1	04/16/05	04/20/05	KWG0506138
Residual Range Organics (RRO)	15 J 2011	20	5.5	1	04/16/05	04/20/05	KWG0506138

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	74	54-140	04/20/05	Acceptable
n-Triacontane	74	50-150	04/20/05	Acceptable

Comments:

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Form 1A - Organic

l of l SuperSet Reference:

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Page RR47336

Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005 Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R5-SB01-0.0.5

Lab Code:

K2502497-017

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

Extraction Method: Analysis Method:

8015M

				Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	13 J	13	4.3	1	04/16/05	04/21/05	KWG0506138	
Residual Range Organics (RRO)	110 Z	20	4.0	1	04/16/05	04/21/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl	103	54-140	04/21/05	Acceptable	
n-Triacontane	97	50-150	04/21/05	Acceptable	

Comments:

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Form 1A - Organic

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SuperSet Reference:

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Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063

Sample Matrix: Soil

Service Request: K2502497

Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name: TO63-R5-SB03-0.0.5 **Lab Code:** K2502497-018

Extraction Method: EPA 3550B **Analysis Method:** 8015M

Units: mg/Kg
Basis: Dry

Level: Low

				Dilution	Date	Date	Extraction	Mata
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	ND U	13	3.7	1	04/16/05	04/21/05	KWG0506138	
Residual Range Organics (RRO)	18 J 20U	20	3.5	1	04/16/05	04/21/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl	90	54-140	04/21/05	Acceptable	
n-Triacontane	97	50-150	04/21/05	Acceptable	

Comments:

Form 1A - Organic Page 1 of 1
SuperSet Reference: RR47336

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Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R2-SB03-0.0.5

Lab Code:

K2502497-019

Extraction Method:

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

Analysis Method:

8015M

				Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	ND U	12	5.3	1	04/16/05	04/21/05	KWG0506138	
Residual Range Organics (RRO)	33 Z	18	5.0	1	04/16/05	04/21/05	KWG0506138	

Comments:

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Form 1A - Organic

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SuperSet Reference:

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Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502497

Date Collected: 04/06/2005 Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R2-SB02-0.0.5

Lab Code:

K2502497-020

Extraction Method:

EPA 3550B

Analysis Method:

8015M

Units: mg/Kg Basis: Dry

Level: Low

A. J. J. Nome	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Analyte Name Diesel Range Organics (DRO) Residual Range Organics (RRO)	ND U 45 Z	12 18	5.4 5.1	1 1	04/16/05 04/16/05	04/21/05 04/21/05	KWG0506138 KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Terphenyl	87	54-140	04/21/05	Acceptable
Triacontane	87	50-150	04/21/05	Acceptable

Comments:

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Form 1A - Organic

SuperSet Reference:

RR47336

SDG #:	13575A8 K2502497 tory: Columbia Analytic	-			PLE1 Leve		ESS WORKSHEET		Date:6/13/0: Page://or// Reviewer: 2nd Reviewer:
	_						(EPA SW 846 Method		
	on findings worksheets				011044	ing v	andation areas. Validation		
	Validation	Area					Comm	ents	
I.	Technical holding times			A	Sam	oling c	lates: 4/6/05		
IIa.	Initial callbration			A					
Ilb.	Calibration verification			\forall	70	D 8	biel		
111.	Blanks			W/					
IVa.	Surrogate recovery			A					
IVb.	Matrix spike/Matrix spike du	plicate	:S	A					
IVc.	Laboratory control samples			A	2	.0-	>		
٧.	Target compound identificat	tion		N					
VI.	Compound Quantitation and	CRQ	Ls	N					
VII.	System Performance			N					
VIII.	Overall assessment of data			\$	ļ				
IX.	Field duplicates	,		w	D	-3	+4, 8+T063R	15	301-0-0.50 WP (KXXX
Χ.	Field blanks			L N					
	A = Acceptable N = Not provided/applicable SW = See worksheet Samples:	•	R = Rin:	o compound sate eld blank	s dete	cted	D = Duplicate TB = Trip blank EB = Equipment blan	k	
1 T	O63-R2-SB04-0-0.5	11	TO63-R4-SB0	04-0-0.5		21	TO63-R5-SB03-0-0.5MS	31	KW40506138-4
	O63-R2-SB04-3-4	12	TO63-R4-SB0	04-4-5		22	TO63-R5-SB03-0-0.5MSD	32	
	O63-R2-SB01-0-0.5	13	TO63-R5-SB0	04-0-0.5		23		33	
	O63-R2-SB01-0-0.5 Dup	14	TO63-R5-SB0	04-5-6		24		34	
	O63-R2-SB01-1-2	15	TO63-R5-SB0	02-0-0.5		25		35	
) T	O63-R1-SB04-0-0.5	16	TO63-R5-SB0)2-3-4		26		36	
, т	O63-R1-SB04-4-5	17	TO63-R5-SB0	01-0-0.5		27		37	
т	O63-R1-SB01-0-0.5	18	TO63-R5-SB0	03-0-0.5		28		38	
) т	O63-R1-SB03-0-0.5	19	TO63-R2-SB0	03-0-0.5		29		39	
0 T	O63-R1-SB03-4-5	20	TO63-R2-SB0	02-0-0.5		30		40	

Notes:_

SDG #: K29502497 LDC #: 135/548

VALIDATION FINDINGS WORKSHEET Blanks

Reviewer: Page: 2nd Reviewer:

> ၁၅ METHOD:

all questions answered "N". Not applicable questions are identified as "N/A".	
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ase see qualifications below for	
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Were all samples associated with a given method blank? X/N N/A

Was a method blank performed for each matrix and whenever a sample extraction procedure was performed? Y'N N'A

Was a method blank performed with each extraction batch? NA NA

Were any contaminants found in the method blanks? If yes, please see findings below. V/N N/A

evel W/D Only

(Gasoline and aromatics only)Was a method blank analyzed with each 24 hour batch? Y N M/A

Associated samples: Was a method blank analyzed for each analytiçal / extraction batch of <20 samples? Y N NIA

Blank analysis date: 4/20/0 < Blank extraction date: 4/6/5

Conc. units: MAS

Compound	Blank ID						S	Sample Identification	ntification				***************************************		
- LWA	24/40 506/38-4	_	7	W	4	5	9	7	D	a	0)	11	(2	<u>M</u>	4
024	4	1/66	45	32/	(A)	1/1/2	(60)	7/12	(300)	(A)	(45)	108	150		32/
		haz/		h/		n		72/				77	Z	haz/	A

Associated samples: Blank analysis date:_ Blank extraction date: Conc. units:

Compound	Blank ID					Sample	Sample Identification			
\$35.55 Sec. 200	15W 4650 6138-4	91 (5)	2115		61 81	20				
744	79	15/18/			(33)	(ZE)				T
		now has	No	næ/)				
овексионня меня применя выполня выполня выполня выполня в подати в под применения в под применения в под примен	The second secon									
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							1			And and a second second

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".

SDG # 12522497 LDC #: 13575A8

VALIDATION FINDINGS WORKSHEET Field Duplicates

Reviewer: Page: 2nd reviewer:_

METHOD: VGC HPLC

Y N N/A Were field duplicate pairs identified in this SDG?

Y N N/A Were target compounds detected in the field duplicate pairs?

	Concentration (WS)	MS/)	%RPD	Qualification Parent only / All Samples
Compound	W	4	Limit s	
	-XE	*	W	
				устаний в не на
				обили обласня устольного ученици выполня моломом положного инфактивного выполня в резельсовующего выполня вы

	Concentration	Concentration (W.S.)	%RPD	Qualification
Compound	ab	1063-R1-5B01-0-0.50UP	Limit ≤ Du P	ratent only 1 All Samples
ARO	75	15	46	
	300	091	19	
				основничення в применення в пр

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Ballfields Parcels at DoDHF Novato, CA

Collection Date: April 6, 2005

LDC Report Date: June 15, 2005

Matrix: Soil

Parameters: Diesel Range Organics & Residual Range Organics

Validation Level: NFESC Level III

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K2502499

Sample Identification

TO63-R1-SB02-0-0.5 TO63-R1-SB01-0-0.5Dup

Introduction

This data review covers 2 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 for Diesel Range Organics and Residual Range Organics.

The review follows the Final Sampling and Analysis Plan for Preliminary Assessment/Site Investigation of Ballfields Parcels at DoDHF Novato, California, (March 23, 2005) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than 20.0%.

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent difference (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic or residual range organic contaminants were found in the method blanks.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples TO63-R1-SB01-0-0.5Dup and TO63-R1-SB01-0-0.5 (from SDG K2502497) were identified as field duplicates. No diesel range organics or residual range organics were detected in any of the samples with the following exceptions:

	Concentrat	ion (mg/Kg)	
Compound	TO63-R1-SB01-0-0.5Dup	TO63-R1-SB01-0-0.5	RPD
Diesel range organics	15	24	46
Residual range organics	160	300	61

X. Field Blanks

No field blanks were identified in this SDG.

Ballfields Parcels at DoDHF Novato, CA Diesel Range Organics & Residual Range Organics - Data Qualification Summary -SDG K2502499

No Sample Data Qualified in this SDG

Ballfields Parcels at DoDHF Novato, CA Diesel Range Organics & Residual Range Organics - Laboratory Blank Data Qualification Summary - SDG K2502499

No Sample Data Qualified in this SDG

Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502499

Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

T063-R1-SB02-0-0.5

Lab Code:

K2502499-011

Extraction Method:

EPA 3550B

Analysis Method:

8015M

Units: mg/Kg

Basis: Dry

Level: Low

			Dilution	Date	Date	Extraction	
Result O	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
	13	4.0	l	04/18/05	04/19/05	KWG0506162	
110 Z	20	3.8	1	04/18/05	04/19/05	KWG0506162	
	Result Q 12 J 110 Z	12 J 13	12 J 13 4.0	Result Q MRL MDL Factor 12 J 13 4.0 1	12 J 13 4.0 1 04/18/05	Result Q MRL MDL Factor Extracted Analyzed 12 J 13 4.0 1 04/18/05 04/19/05 12 J 0.0 1 04/18/05 04/19/05	Result Q MRL MDL Factor Extracted Analyzed Lot 12 J 13 4.0 1 04/18/05 04/19/05 KWG0506162 12 J 10 04/18/05 04/19/05 KWG0506162

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl	85	54-140	04/19/05	Acceptable	
n-Triacontane	93	50-150	04/19/05	Acceptable	

Comments:

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Form 1A - Organic

SuperSet Reference:

Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502499 Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

T063-R1-SB01-0-0.5 DUP

Lab Code:

K2502499-012

Extraction Method:

EPA 3550B

Analysis Method:

8015M

Units: mg/Kg Basis: Dry

Level: Low

A. A. & Nome	Result O	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Analyte Name Diesel Range Organics (DRO) Residual Range Organics (RRO)	15 Z 160 Z	14 22	4.3 4.1	1 1	04/18/05 04/18/05	04/19/05 04/19/05	KWG0506162 KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Terphenyl	86	54-140	04/19/05	Acceptable
Triacontane	105	50-150	04/19/05	Acceptable

Comments:

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Form 1A - Organic

SuperSet Reference:

Page

1 of 1

LDC #:	13575B8	VALIDATION COMPLETENESS WORKSHEET	Date: <u>6//</u>	
SDG #:_	K2502499	Level III	Page: <u>/ o</u>	[/
Laborato	ory: Columbia Ana	alvtical Services	Reviewer:	4
Laborate	,, y. <u></u>		2nd Reviewer:	_4

METHOD: GC Diesel Range Organics & Residual Range Organics (EPA SW 846 Method 8015)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
1.	Technical holding times	A	Sampling dates: 4/6/05
IIa.	Initial calibration	A	
Ilb.	Calibration verification	A	70 9 + ICV
111.	Blanks	4	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	\mathbf{A}	T063-R4-SB01-0-0.5 (K>502005)
IVc.	Laboratory control samples	A	205
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	w	D=1= D=2+T063-R1-SB01-0-0.5(KXX)
X.	Field blanks	L N	·

Note:

A = Acceptable

N = Not provided/applicable SW = See worksheet

ND = No compounds detected R = Rinsate

FB = Field blank

D = Duplicate

TB = Trip blank
EB = Equipment blank

Validated Samples:

Ī,	T063-R1-SB02-0-0.5	11	21	31
2	TO63-R1-SB01-0-0.5Dup	12	22	32
3	V	13	23	33
4		14	24	34
5		15	25	35
6		16	26	36
7		17	27	37
8		18	28	38
9		19	29	39
10		20	30	40

Notes:	

LDC#: 135558 SDG#: K350-2499

VALIDATION FINDINGS WORKSHEET Field Duplicates

Page: _/of / Reviewer:

2nd reviewer:___

Parent only / All Samples Qualification %RPD Limit s__ TOBS-18-0-1801-0-450UF 160 1/ Concentration (MS) GC HPLC
Were field duplicate pairs identified in this SDG?
Were target compounds detected in the field duplicate pairs? N Compound WETHOD: V N RO DRO

DRO RRO (60 3504	Concentration (W	%RPD	Qualification
Compound 15 160	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\		Parent only / All Samples
(5)	7063-R1-5B01-0-05 2005	S MATES	
091		46	
	160 300	10	
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			осного в поверения

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Ballfields Parcels at DoDHF Novato, CA

Collection Date: April 6, 2005

LDC Report Date: June 14, 2005

Matrix: Soil

Parameters: Diesel Range Organics & Residual Range Organics

Validation Level: NFESC Level III & IV

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K2502505

Sample Identification

TO63-R3-SB04-0-0.5

TO63-R3-SB04-2-3**

TO63-R3-SB01-0-0.5

TO63-R3-SB01-4-5

TO63-R3-SB02-0-0.5

TO63-R3-SB03-0-0.5**

TO63-R4-SB03-0-0.5

TO63-R4-SB03-3-4

TO63-R4-SB02-0-0.5

TO 00 TH OBOL 0 0.5

TO63-R4-SB01-0-0.5** TO63-R4-SB01-0-0.5MS

TO63-R4-SB01-0-0.5MSD

^{**}Indicates sample underwent NFESC Level IV review

Introduction

This data review covers 12 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 for Diesel Range Organics and Residual Range Organics.

The review follows the Final Sampling and Analysis Plan for Preliminary Assessment/Site Investigation of Ballfields Parcels at DoDHF Novato, California, (March 23, 2005) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classifled a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent NFESC Level IV review. NFESC Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by NFESC Level III criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent difference (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic or residual range organic contaminants were found in the method blanks.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level III criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level III criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level III criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Ballfields Parcels at DoDHF Novato, CA Diesel Range Organics & Residual Range Organics - Data Qualification Summary -SDG K2502505

No Sample Data Qualified in this SDG

Ballfields Parcels at DoDHF Novato, CA Diesel Range Organics & Residual Range Organics - Laboratory Blank Data Qualification Summary - SDG K2502505

No Sample Data Qualified in this SDG

Analytical Results

Client:

Battelle Memorial Institute Novato Ballfields/G486063

Project: Sample Matrix:

Soil

Service Request: K2502505

Date Collected: 04/06/2005 **Date Received:** 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R3-SB04-0-0.5

Lab Code:

K2502505-001

Extraction Method:

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

Analysis Method:

8015M

				Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	ND U	13	3.9	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	25 Z	20	3.7	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl n-Triacontane	83 98	54-140 50-150	04/19/05 04/19/05	Acceptable Acceptable	

Comments:

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Form 1A - Organic

Page 1 of 1 RR47251 SuperSet Reference:

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406

Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502505

Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R3-SB04-2-3

Lab Code:

K2502505-002

Extraction Method:

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

Analysis Method:

8015M

				Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	ND U	13	5.8	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	66 Z	20	5.5	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl n-Triacontane	72 75	54-140 50-150	04/19/05 04/19/05	Acceptable Acceptable	

Comments:

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Form 1A - Organic

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Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502505

Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R3-SB01-0-0.5

Lab Code:

K2502505-003

Extraction Method: Analysis Method:

EPA 3550B

8015M

Units: mg/Kg Basis: Dry

Level: Low

				Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	ND U	13	4.8	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	39 Z	20	4.5	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	78	54-140	04/19/05	Acceptable Acceptable
n-Triacontane	89	50-150	04/19/05	

Comments:

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Form 1A - Organic

SuperSet Reference:

RR47251

1 of 1

Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502505

Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R3-SB01-4-5

Lab Code:

K2502505-004

Extraction Method: Analysis Method:

Residual Range Organics (RRO)

EPA 3550B 8015M

Units: mg/Kg Basis: Dry

Level: Low

Extraction Dilution Date Date MDL **Factor** Extracted Analyzed Lot Note MRL Result Q **Analyte Name** KWG0506162 04/19/05 04/18/05 Diesel Range Organics (DRO) 13 3.9 1 ND U KWG0506162 04/18/05 04/19/05 1

20

25 Z

3.7

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	81	54-140	04/19/05	Acceptable
n-Triacontane	96	50-150	04/19/05	Acceptable

Comments:

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Form 1A - Organic

SuperSet Reference: RR47251

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Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502505

Date Collected: 04/06/2005 **Date Received:** 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R3-SB02-0-0.5

Lab Code:

K2502505-005

Extraction Method: Analysis Method:

EPA 3550B

Units: mg/Kg Basis: Dry

8015M

Level: Low

				Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	7.8 J	13	3.9	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	86 Z	20	3.7	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl	91	54-140	04/19/05	Acceptable	
n-Triacontane	111	50-150	04/19/05	Acceptable	

Comments:

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Form 1A - Organic

SuperSet Reference: RR47251

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Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502505

Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R3-SB03-0-0.5

Lab Code:

K2502505-006

Extraction Method:

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

8015M **Analysis Method:**

				Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	ND U	13	4.1	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	37 Z	20	3.9	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl n-Triacontane	87 102	54-140 50-150	04/19/05 04/19/05	Acceptable Acceptable	

Comments:

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SuperSet Reference:

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Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502505

Date Collected: 04/06/2005 **Date Received:** 04/07/2005

Note

Diesel and Residual Range Organics

Sample Name:

TO63-R4-SB03-0-0.5

Lab Code:

K2502505-007

Extraction Method: Analysis Method:

EPA 3550B 8015M

Units: mg/Kg Basis: Dry

Level: Low

Analyta Nama	

Extraction Date Dilution Date MRL MDL **Factor Extracted** Analyzed Lot Result Q Analyte Name KWG0506162 04/19/05 Diesel Range Organics (DRO) 13 3.7 1 04/18/05 33 H KWG0506162 04/19/05 20 3.5 1 04/18/05 Residual Range Organics (RRO) 250 O

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	80	54-140	04/19/05	Acceptable
n-Triacontane	96	50-150	04/19/05	Acceptable

Comments:

Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502505

Date Collected: 04/06/2005

Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R4-SB03-3-4

Lab Code:

K2502505-008

Extraction Method: Analysis Method:

EPA 3550B

Units: mg/Kg Basis: Dry

Level: Low

8015M

				Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	ND U	12	5.4	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	25 Z	20	5.0	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	79	54-140	04/19/05	Acceptable Acceptable
n-Triacontane	91	50-150	04/19/05	

Comments:

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Form 1A - Organic

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Analytical Results

Client:

Battelle Memorial Institute

Project: Sample Matrix: Novato Ballfields/G486063

Soil

Service Request: K2502505

Date Collected: 04/06/2005 **Date Received:** 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R4-SB02-0-0.5

Lab Code:

K2502505-009

Extraction Method: Analysis Method:

EPA 3550B

8015M

Units: mg/Kg Basis: Dry

Level: Low

				Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	7.0 J	13	3.8	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	71 Z	20	3.6	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	89	54-140	04/19/05	Acceptable Acceptable
n-Triacontane	108	50-150	04/19/05	

Comments:

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Analytical Results

Client:

Battelle Memorial Institute

Project:

Novato Ballfields/G486063

Sample Matrix:

Soil

Service Request: K2502505

Date Collected: 04/06/2005 **Date Received:** 04/07/2005

Diesel and Residual Range Organics

Sample Name:

TO63-R4-SB01-0-0.5

Lab Code:

K2502505-010

Extraction Method: Analysis Method:

EPA 3550B

8015M

Units: mg/Kg
Basis: Dry

Level: Low

				Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	MDL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	ND U	13	3.7	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	6.9 J	20	3.5	1 .	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	6.9 J	20	3.5	1 .	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	80	54-140	04/19/05	Acceptable
n-Triacontane	94	50-150	04/19/05	Acceptable

Comments:

/6/19/00

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LDC #: 13575C8	VALIDATION COMPLETENESS WORKSHEET	Date: <u>6/13/</u> 05
SDG #: K2502505	Level III/IV	Page: <u>/</u> of <u>/</u>
Laboratory: Columbia Analytic	al Services	Reviewer:
METHOD: GC Diesel Range	Organics & Residual Range Organics (EPA SW 846 Method 8015)	

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/6/05
lla.	Initial calibration	4	
IIb.	Calibration verification	Φ	700 & 1 eV
111.	Blanks	A	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	A	
IVc.	Laboratory control samples	A	109
V.	Target compound identification	4	Not reviewed for Level III validation.
VI.	Compound Quantitation and CRQLs	4	Not reviewed for Level III validation.
VII.	System Performance	A	Not reviewed for Level III validation.
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X.	Field blanks	I V	

Note: A = Acceptable

N = Not provided/applicable

ND = No compounds detected R = Rinsate

SW = See worksheet

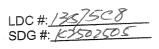
FB = Field blank

D = Duplicate TB = Trip blank EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

M	5015				
1	TO63-R3-SB04-0-0.5	11	TO63-R4-SB01-0-0.5MS	21	31
2	TO63-R3-SB04-2-3**	12	TO63-R4-SB01-0-0.5MSD	22	32
3	TO63-R3-SB01-0-0.5	13	KWE0506162-4	23	33
4	TO63-R3-SB01-4-5	14	/	24	34
5	TO63-R3-SB02-0-0.5	15		25	35
6	TO63-R3-SB03-0-0.5**	16		26	36
7	TO63-R4-SB03-0-0.5	17		27	37
8	TO63-R4-SB03-3-4	18		28	38
9	TO63-R4-SB02-0-0.5	19		29	39
10	TO63-R4-SB01-0-0.5**	20		30	40

Notes:	



VALIDATION FINDINGS CHECKLIST

Method: GC HPLC	Yes	No	NA	Findings/Comments
Validation Area	1 63		1,	
Technical holding times				
Il technical holding times were met.	/			
cooler temperature criteria was met.				
Initial calibration				
oid the laboratory perform a 5 point calibration prior to sample analysis?	1			
Vas a linear fit used for evaluation? If yes, were all percent relative standard leviations (%RSD) ≤ 20%?	<u> </u>		╂	
Vas a curve fit used for evaluation? If Yes, what was the acceptance criteria used?	-	_	1	
Did the initial calibration meet the curve fit acceptance criteria?	+	\vdash	+-	
Nere the RT windows properly established?	<i>K</i>			
V. Continuing calibration	T	Τ	1	
What type of continuing calibration calculation was performed?%D or %R	1		-	
Was a continuing calibration analyzed daily?	+	-	+-	
Were all percent differences (%D) ≤ 15%.0 or percent recoveries 85-115%?	+	┼	-	
Were all the retention times within the acceptance windows?	1′			
V. Blanks	Τ/	Т	Τ	
Was a method blank associated with every sample in this SDG?	+	-	+-	
Was a method blank analyzed for each matrix and concentration?	1	4-	+	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.			1_	
VI. Surrogaté spikes			<u> </u>	T
Were all surrogate %R within the QC limits?	4	1_		
If the percent recovery (%R) of one or more surrogates was outside QC limits, was reanalysis performed to confirm %R?	ıs			
If any %R was loss than 10 percent, was a reanalysis performed to confirm %R?			<u>Ľ</u>	
VII. Matrix spike/Matrix spike duplicates		Т	T	
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		1		
Was a MS/MSD analyzed every 20 samples of each matrix?	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?				
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	1	1		
Was an LCS analyzed per extraction batch?				

LDC #: 13575C8 SDG #: 15502505

VALIDATION FINDINGS CHECKLIST

Page: of Reviewer: 2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?				
IX. Regional Quality Assurance and Quality Control	1		F	d Coperation
Were performance evaluation (PE) samples performed?				
Were the performance evaluation (PF) samples within the acceptance limits?				
X. Target compound identification	T -	1	<u> </u>	
Were the retention times of reported detects within the RT windows?	14			
XI. Compound quantitation/CRQLs		L	Τ	
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance		-T	T	, , , , , , , , , , , , , , , , , , ,
System performance was found to be acceptable.				
XIII. Overall assessment of data		4		
Overall assessment of data was found to be acceptable.		1		
XIV. Field duplicates				
Were field duplicate pairs identified in this SDG?			1	
Were target compounds idetected in the field duplicates?			\perp	
XV. Field blanks				Acceptance of the second of th
Were field blanks identified in this SDG?		/	1_	
Were target compounds detected in the field blanks?			\angle	

SDG# KX20 2505 LDC#:13575CB

Initial Calibration Calculation Verification VALIDATION FINDINGS WORKSHEET

/of/	4	X
Page:_	Reviewer:	2nd Reviewer:

METHOD: GC_

The calibration Factor (CF), average CF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following

average CF = sum of the CFinuraber of standards %RSD = 100 * (S/X) calculations: CF = A/C

A = Area of compound, C = Concentration of compound, S = Standard deviation of the CF X = Mean of the CFs

									AND THE PERSON OF THE PERSON O
				Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
*	Standard ID	Calibration Date	Compound	CF (CECSEM)	CF (/ce/Gtd)	Average CF (initial)	Average CF (initial)	«RSD	%RSD
-	1242		020	3/200	31200	able	33900	4./	1.4
-		\							
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7									e de la grada contracto de la
8									
	- Was								
4									
_	T								
	and a second								

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 13975C3 SDG #: 1250 250 5

VALIDATION FINDINGS WORKSHEET Continuing Calibration Results Verification

Page: of Reviewer: 2nd Reviewer:

METHOD: GC / HPLC___

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF - CF)/ave. CF Where: a CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound

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	punoduoo
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	ntratior
i	= Concent
	ĕ
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					Renorted	Recalculated	Reported	Recalculated
*	Standard ID	Calibration Date	Compound	Average CF(Ical)/ CCV Conc.	CF/Conc. CCV	CF/Conc. CCV	%D	Q %
	20/6/2 2/078/40	2/19/05	ORO	33900	20818	31800	9	8
	_							
^	0418FBUT	11/9/18	220	33800	32300	32300	9	
	1	10/1/2		,				
٣.				·		-		
4								
	ANAMAN MANAMATAN							

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 1357508 SDG #: 1050 2505

VALIDATION FINDINGS WORKSHEET Surrogate Results Verification

Page: of Reviewer: 2nd reviewer:

METHOD: 4 GC HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found SS = Surrogate Spiked

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
o-Terphenyl	RTX-1	25	35.88	78	R	0
n-Trideon fame	1	1	87.69	-52	Corp Lorenz	<i>Q</i>
			\			ona alaksististististististististististististist

Sample ID:

		nikkondunikuuri (1343-1344) kaalaika kaalaika kaalaika kaalaika kaalaika kaalaika kaalaika kaalaika kaalaika k	ССООДОГО ДОГО СТАТИТЕ В СТАТИТЕ	HATANOVIED ET TETET ET MERERET TETET ET ALAGOSONISSONISSONISSONISSONISSONISSONISSON
	THE REAL PROPERTY OF THE PROPE	A martin property of the control of		
Recalculated				
Reported				

Sample ID:

Percent Difference		enskanenskander denskande forestalde, enskalde gebruik skalder enskander enskander enskander.	anna dependado de personación de la compositiva della compositiva della compositiva de la compositiva della compositiva	AAVOIMAENOONIINNOOTITAINIIN VYN INOONOOTIONIATIINTIIN TAVOIMAENOOTIONO
Percent Recovery	Recalculated			AND THE RESIDENCE OF THE PROPERTY OF THE PROPE
Percent Recovery	Reported			
Surrogate Found				
Surrogate Spiked				
Column/Detector				
Surrogate				

SDG#: Kosposos LDC #: 135/5628

Matrix Spike/Matrix Spike Duplicates Results Verification VALIDATION FINDINGS WORKSHEET

2nd Reviewer: Page: /of / Reviewer:

METHOD:

METHOD: / GC HPLC
The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below

using the following calculation: %Recovery = 100 * (SSC - SC)/SA

SC = Sample concentration

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

MS/MSD samples:

SSC = Spiked sample concentration SA = Spike added MS = Matrix spike

MSD = Matrix spike duplicate

											-		T	T	T	T	
ISD	a	Recalc.	Þ						Company of the Section Company of the Company of th	de la composiçõe de la				Name of the Control o	AND THE PROPERTY OF THE PROPER		
MS/MSD	RPD	Reported	0				AND THE PROPERTY OF THE PROPER	eesse ee aan naar van de	HEROCOCKE CONTRACTOR C		AND	ALLEGE TO THE STATE OF THE STAT			ADDITION OF THE ABABILITY OF THE ABABILI		
Duplicate	covery	Recalc.	36														
Matrix Spike Duplicate	Percent Recovery	Reported	36														
ike	covery	Recalc.	76														
Matrix spike	Percent Recovery	Reported	16														
nple	J. J	MSD	660														
Spike Sample	Concentration (MS)	MS	508				·		-					·			
Sample	Conc.		X														
9	ed (S)	MSD	3/3														
ias	Added	MS	3/3														
,	pur		(8015)	(8015)	(80218)	(RSK-175)	(8151)	(8151)	(8310)	(8310)	(8330)	luene (8330)				Achestica patrica des spirator de la compresión de proposiciones de la compresión de la com	
AND THE RESIDENCE OF THE PROPERTY OF THE PROPE	Compound	- dimen	Gasoline	Diesel	Benzene	Methane	2,4-D	Dinoseb	Naphthalene	Anthracene	HMX	2,4,6-Trinitrotoluene (8330)	National des la commence des la commence de la commence del la commence de la com	монительного при	одинатиров по при	NATE COLON CONTRACTOR DA SANCO COLON COLON CONTRACTOR C	MANAGEMENT OF THE PROPERTY OF

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

SDG#: K2S22SDS LDC#: 13575c8

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

2nd Reviewer Page: ∠of∠ Reviewer.

METHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

SSC = Spiked sample concentration SA = Spike added LCS = Laboratory Control Sample Where

SC = Sample concentration

RPD =(((SSCLCS - SSCLCSD) * 2) / (SSCLCS + SSCLCSD))*100

LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: KWG05761

	Spi	ke	Sample	Spike 5	ample	SOT	S	rcsp	D	rcs/rcsD	csD
Compound	Added () S/S	ded, 8/8)	Conc.,	Concer (Concentration (MS/3)	Percent Recovery	ecovery	Percent Recovery	ecovery	RPD	٥
	rcs	LCSD		rcs	CSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											en proposition de la constitución de la constitució
Diesel (8015)	320	1×1×	-wagestir	217	4/4	89	99			eneral expression in the section of	The state of the s
Beilzene (8021E)										er soor for the principle in the design of the principle in the principle	
Methane (RSK-175)										en principa (denden symmetrica construction principal de l'article de	
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)										ORTHORNER PROPERTY OF THE PROP	основника в верхиненти в предостивника в предостивнителнителнителнителнителнителнителнител
2,4,6-Trinitrotoluene (8330)											A STATE OF THE STA
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NATURAL ENVIRONMENTAL PROPERTY OF THE PROPERTY										·	
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Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

SDC #: K2/22/2015 LDC #: 13575CB

VALIDATION FINDINGS WORKSHEET Sample Calculation Verification

Page: 2nd Reviewer: Reviewer:

> GC HPLC METHOD:

Were all reported results recalculated and verified for all level IV samples? Were all recalculated results for detected target compounds agree within 10% of the reported results?

Concentration=

(A)(Fv)(Df) (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured Fv= Final Volume of extract

Df= Dilution Factor

RF= Average response factor of the compound In the initial calibration

Vs= Initial volume of the sample Ws= Initial weight of the sample %S= Percent Solid

Example:

Sample ID.

Compound Name

Concentration = (23\$7181)(4)(1)

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Recalculated Results	Concentrations (
Reported	Concentrations (
	Compound					
	Sample ID					
	林					

SAMPCALew.wpd

Comments: